

Army

Operation Numerika

Numeracy Skills via Nintendo DS



Winner of 'Best use of mobile learning'
E-learning Awards 2009

The challenge



Around 40% of Standard Entry recruits to the British Army are found not to have the required numeracy skills. As a result, up to 10% are unable to progress to the next stage of their recruitment and in some cases have to leave the Army. Recruits are typically aged 17-30 and most joined to get away from formal education.

The traditional classroom and workbook approach to teaching numeracy wasn't working. Something new and appealing was needed, that better suited the needs of developing soldiers. The skills gap was depriving the Army of otherwise talented soldiers.

Learner-led technology, not technology-led learning

Rather than rush into a solution, we decided not to rule anything out and began with a period of research. Extensive focus groups with typical recruits explored:

- Learning preferences and attitudes
- Feelings and opinions about maths
- Likes and dislikes
- The usability of mobile learning platforms

These revealed a dislike of maths and a requirement for solutions not reliant on pen and paper; making use of visualisation and minimising text. No mode of learning was dismissed at the outset, but recruits' familiarity with computer game environments and mobile gaming platforms meant mobile learning was ideal.

A games console offered several benefits:

- *Removing stigma of 'homework'*: There's no stigma attached to playing on a games console and mobile learners can learn whenever and wherever suits them, on the move
- *Inspiring repeat attempts*: Mobile learners can repeat levels to try and do better, further encouraged with hints and 'beat your best' incentives
- *Immediate feedback*: Mobile feedback is immediate. Positive feedback, developmental feedback and even advising someone to speak to a tutor are all positive interactions
- *Enabling mental arithmetic*: Mobile scenarios draw on the mental skills required when faced with real mathematical problems

Why Nintendo

The Nintendo DS was chosen because it has reasonable penetration amongst the user group. It has already enjoyed success with the Brain Training maths model and would allow use of dynamic number lines to show decimals, arrangements of moving bullets to demonstrate multiplication and other visual clues. It also has a stylus and a character recognition set for a 3 year old's handwriting.



So after assessing numerous devices, the Nintendo DS proved most appropriate - a handheld, portable and robust device, which permits any time/place usage.

The solution

The solution is a scenario based 'basic skills' numeracy programme to inspire and motivate new recruits. The use of a games console takes the learning out of the traditional, formal classroom and puts it in an informal setting. The solution provides simple, contextually relevant games, addressing all aspects of Entry Level 2 numeracy. It builds the learner's ability as they progress through increasingly difficult levels and stores their score, giving them the opportunity and encouragement to improve their performance. This, combined with the game-play, engages the target audience and encourages repeated use.

The outcome

This is the first time an educational package has been designed on a Nintendo DS, to provide context

specific support to individual adult learners. You may expect to see kids at home or in the street using their Nintendo DS, but did you ever expect to see a soldier getting out his Nintendo DS to play a maths game? The solution has exceeded the Army's requirements by engaging soldiers in mathematics to raise their numeracy levels to entry level 3.

"Using the Nintendo to learn maths is great - it makes it less hard work and more like a game – 'specially as you can try to beat your last score and you're playing against the clock. It makes maths almost exciting! I'd love to learn more like this in the future."

"You've always got to have a bit of excitement whatever you're doing. If not then your mind's going to switch off and you're just going to get bored and it's not going to happen."

For more information on our work in this area, call +44 (0)1273 728686.

